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ABSTRACT

This paper looked at the experience that college students have when taking exams. The sample population was made up of students completing their first exam of the semester. The study was designed to offer research-based support on how to help students improve their performance on multiple-choice exams. Student perceptions of the number of items guessed, confusing vocabulary words, distractibility, drawing a blank, and anxiety leading separately to recall and judgment interference were all found to be inversely related to actual exam performance at statistically significant levels. Qualitative explanations of this exam experience highlight the ability of successful students to focus, re-focus, block out distractions, concentrate, remain calm, and employ self-talk strategies. The findings can be employed in intervention programs to assist students as they attempt to overcome test anxiety and perform up to their academic potential. Appendix A is Questionnaire. (Contains 6 tables and 1 figure.) (JDM)

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Student Strategic Decision Making and Mindset During Multiple-Choice Examinations

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Running head: Exam experience

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Abstract

College students were asked to reflect upon their exam experience immediately after completing the first exam of the semester. Student perceptions of number of items guessed, confusing vocabulary words, distractibility, drawing a blank, and anxiety leading separately to recall and judgement interference were all found to be inversely related to actual exam performance at statistically significant levels. Qualitative explanations of this exam experience highlighted the ability of successful students to focus, re-focus, block out distractions, concentrate, remain calm, and employ self-talk strategies. The findings could be employed in intervention programs to assist students as they attempt to overcome test anxiety and perform up to their academic potential.

Student Strategic Decision Making and Mindset During Multiple-Choice Examinations

Unfortunately, we know very little about exactly what goes through the minds of university students across this country as they take examinations. The ubiquitous nature of taking examinations on campus should not lead us to believe that even all intelligent, talented, and gifted students automatically matriculate with excellent reading and writing skills, study habits, learning and retrieval strategies, and test-taking savvy. In fact, the case can easily be made that many students (bright and not so bright) are at this moment contemplating the taking of examinations while in possession of inferior levels of the educational survival skills noted above. The current study was designed to offer research-based support for the dilemma of how to help students improve their performance on multiple-choice exams.

We have excellent evidence that examinations can produce a wide range of cognitive and emotional responses such as: anxiety, worry, fear, frustration, elation, joy, pride, satisfaction, and confidence. At the central core of the examination experience is the concern (from both students and faculty members) originating from the evaluation process, since professional judgements like final grades are normally

based upon cumulative exam results. The following facts seem relevant here: (1) measurement instruments designed to document student learning are psychometrically imperfect, (2) human judgement often involves some subjective elements even in our most valiant attempts to be fair and objective, (3) students often attend classes for which they are poorly prepared, and (4) exam grades accumulate to final course grades that are normally permanently etched on academic records. Classroom examinations can be seen from the student perspective as a form of high-stakes testing where academic good standing, probation, or even dismissal; financial aid; scholarship money; and psychological survival could conceivably all be at stake.

Since the central focus of the current research investigation is on test anxiety, a brief review of what several decades of previous research can offer to our thinking is in order. Spielberger (1966) made the important distinction between viewing anxiety as a personality "trait" that is easily generalizable to many of life situations and the more temporary and contextual "state" of test anxiety aroused in specific testing situations. The increased interest in state test anxiety moved the focus away from the more time-honored clinical approaches and coincided with the re-awakening of interest in cognitive psychology.

Obviously, personality trait elements of test anxiety are latent and will manifest themselves only if the contextual evaluation conditions are ideal. This becomes critically important since the current investigation explores state test anxiety during an actual exam experience.

Another important milestone was achieved when Morris, Davis, and Hutchings (1981) employed factor analytic techniques to identify emotionality and worry components of the numerous instruments purportedly designed to measure test anxiety. Worry included cognitive elements of the anxiety experience, such as negative expectations and cognitive concerns about oneself, the situation at hand, and potential consequences. Emotionality included the perception of the physiological elements of the anxiety experience. Of primary importance was the finding that the cognitive elements of worry consistently led to stronger predictions of actual exam performance than the emotionality elements. The study of test anxiety was thus shifted in the direction of cognitive elements of the exam experience and away from physiological reactions.

Students often claim that they studied and understood the course material, but did poorly on a test because anxiety interfered with their ability remember content and perform well on in-class examinations.

Some researchers became very interested in what has been called interference theory as a temporary anxiety state in exam taking that inhibits the recall of crucial information from long-term memory. Naveh-Benjamin, McKeachie, and Lin (1987) concluded that "poor performance of highly test anxious students is due to problems not only in the test situation itself (the retrieval stage) but also other stages of information processing" (p. 135). They suggested the existence of two types of test anxious students: (1) those with good study habits (no problems in encoding and organizing information) and only problems with retrieval during exams, and (2) those with poor study habits (problems in encoding and organizing information) that lead to obvious exam difficulties.

The current study was designed to explore student self reports regarding the examination experience directly following a classroom exam. It was hypothesized that high achieving students (based upon high exam performance) as compared to low achieving students (based upon low exam performance) would report more strategic use of productive exam-taking strategies, less distractibility, fewer problems with exam vocabulary words, less anxiety, and more accurate estimates of predicted exam score.

Method

Subjects were student volunteers in three (3) sections of the researcher's own course (PSYC-350 Educational Psychology) at SUNY Potsdam during the fall semester of 1999. No extra academic credit was extended to subjects in exchange for participation in the study. Approval was sought and granted by the SUNY Potsdam Institutional Review Board (IRB) to use human subjects in this research. Female students constituted 80% of the sample.

Multiple-Choice Exam

The first multiple-choice exam during the third week of the semester became the focal point for data collection. The entire course was taught using a mastery approach where students were provided detailed advance organizers to accompany the textbook. A set of practice exams that closely matched the content and style of the actual exam questions was also made available to students. Along with the entire set of practice exams questions (n=283) were the answers and detailed explanations regarding why the designated option was the "best" answer and why other options were inferior. While the practice exam mirrored the basic course content of the actual exam, the exam item stems and options were modified so that success on the actual

course exam demonstrated an understanding rather than memorization of course material. Many of the exam items tapped levels beyond rote recall of factual information and included classroom scenes to analyze and interpret. It was thought that this exam generated considerable anxiety on the part of students in spite of the learning materials provided, since this was the first exam in the class. McKeachie (1958) also suggested that tests, which try to go beyond the straight memory of facts probably arouse more anxiety (p. 582). The first exam consisted of 75 multiple-choice items with four possible options for each item. A timeframe of 75 minutes in the regular classroom setting was used to administer the exam.

Post-Exam Questionnaire

A brief one-page form was developed to measure several variables under exploration in this research (See Appendix *A)*. Subjects completed the survey immediately following the initial course examination. The resultant data set included both quantitative and qualitative information. Students were asked to report how many items they changed answers, skipped, and guessed on the items just completed. They were asked if they found difficulty with vocabulary words on the exam, and if so, they were asked to list these words.

Subjects were asked if they detected subtle differences between the form of the actual exam questions and the practice exam items. They were asked if they became distracted during the exam and origin of such distractions. If they were not distracted on the exam, subjects were asked how they maintained their concentration. If they drew a "blank" on certain information, they were asked to describe this experience. They were asked to rate their level of anxiety on the exam just completed by marking a four-point scaled line ranging from "not anxious at all" to "very anxious." Subjects were asked separately if anxiety interfered with their recall and ability to make logical judgements. Qualitative explanations were sought from respondents on these items. Finally, students were asked to honestly estimate how many items they believed they marked correctly on the exam. It should be remembered that neither the subjects nor the researcher had access to their actual exam results at this point in time.

Results

The descriptive results are presented in Table 1. Some 36% of students claimed not to have changed a single answer and 33% of students claimed not to have skipped a single item on the exam. Nearly 5 exam items were marked by guessing on the average. Two

subjects admitted to guessing at one-third of the total items on the exam. A total of 85% of subjects reported no confusing vocabulary words on the exam. Nearly all subjects (96%) reported that they were able to detect the subtle differences from the practice exam items to the actual exam items. A substantial number of students (29%) claimed they were easily distracted at some point during the exam. A total of 60% of students reported drawing a blank during the exam. Anxiety ranged across the entire brief scale (Mean 1.45; almost exactly between slightly and somewhat anxious). More students believed that anxiety interfered with their ability to recall information (46%) as compared to anxiety interfering with their ability to make logical judgements (16%). Actual and estimated exam performance means were identical (60 items correct or 80%); however, greater variation was found in estimates (sd=12.ll) as compared to actual exam scores (sd=8.03).

The correlation coefficients for the quantitative variables used to predict exam performance are provided in Table 2. Student perceptions of frequency of changing answers and skipping items on the exam as predictors of exam score were found to be zero-ordered (-.05 and +.04 respectively). All other correlations for predictor

variables were in the proper direction and most correlations were found to have reached the .01 or .05 statistical significance level. The particularly robust correlations for estimation of items guessed (-.50) and the two-point (yes/no) variable suffering from recall interference (-.49) deserve to be noted.

Table 2 also depicts some interesting comparisons for predicting academic success in a specific context (actual target exam) versus overall course performance (final class average). Independent variables such as items guessed, test anxiety, and exam estimate actually became better predictors of the end of class performance than at the specific target exam. The most powerful predictor of the final class average at the end of the course was found to be the actual first exam performance (r=+.81 not listed in table).

The correlation between estimated and actual exam performance (+.65) while numerically large, also suggests considerable weakness in student prediction. A total of 58% of variation in actual exam performance is unexplained by the result of this student estimate. Exam discrepancy scores were calculated by the following formula: Actual Score (minus) Estimated Score. Exam discrepancy was found to be related to the target exam (r=+.54). Figure 1 depicts the scatterplot

employed for further analysis of these variables. Since a zero-ordered exam discrepancy score indicates a perfect or near-perfect exam prediction, it can easily be seen that more high scores than lower scores in the graph lie near the zero point on the x-axis. Further analysis of this scatterplot shows that high exam performers tended to offer lower predictions than actual exam scores and low exam performers tended to offer estimates that were higher than actual exam scores.

The qualitative responses to the five items on the Post-Exam Questionnaire offer unique self reports that further extend several of the "yes/no" responses. Only one subject out of the total of 8 who claimed there were confusing vocabulary words on the exam could remember the name of a vocabulary word that was confusing on the exam. The responses to the remaining four qualitative response survey items were much more varied and larger in number requiring a separate treatment of each item.

Subjects were very willing to explain what distracted them and what helped them maintain their concentration, since 88% offered some description of this event. The correlation of distractibility as a predictor of exam performance (-.25) is further understood by noting the

explanatory responses. The following generalizations stem from the qualitative data presented in Table 3. Distractibility on the exam was reported by students earning a wide range of exam performance scores (53%-93%). Distractibility originated primarily from sources in the external immediate exam environment such as coughing, hallway noise, and people leaving the room. Concentration resulted primarily from internal mental processes such as blocking out distractions, reading carefully, quiet atmosphere, and the need to perform well. The following conclusion seems warranted: Distractibility is triggered by sensation and concentration is accomplished through perception.

Exactly half of the total subject pool reported "drawing a blank" during the exam **and** offered some explanation of this phenomenon. One surprising finding was that this was again an experience perceived by students across the spectrum of exam performance (53%-92%). It should be recalled that drawing a blank predicted lower exam performance (r=-.40). The majority of responses described a specific course content topic, description of the exam process, emotional reaction, or cognitive reaction. See Table 4 for student explanations of this event.

Over half (58%) of the total subject pool attempted to describe the experience of anxiety interfering or not interfering with the recall of information on the exam. The results can be seen in Table 5. More subjects (n=19) chose to explain why this event took place (yes written responses) as compared to subjects (n=ll) who provided a written explanation for the lack of interference. Issues reported related to recall interference included self-doubt, competing thoughts, worry, and nervousness. Lack of interference was explained by confidence, relaxation, and self-talk. Although the tendency to report that anxiety interfered with recall at the correlational level of -.49, several subjects who reported the occurrence of such a phenomenon still scored very high on the exam.

About half (52%) of the student sample described how anxiety interfered with their ability to make logical judgements on the exam or their ability to deal with exam pressure. The results can be seen in Table 6. More subjects (n=22) who reported that anxiety did not interfere with judgements responded in writing as compared to those subjects (n=5) who reported such interference. A couple of students (n=2) reported the ability to stay calm, focus, concentrate and think and received low exam scores (53% and 64%).

Discussion and Conclusion

The results of the current study support earlier findings that test anxiety is a complex phenomenon that is related to emotional factors, study preparation issues, retrieval skills, cognitive reactions, and overall perceptual processes. One explanation for the lack of stronger predictors among the independent variables employed to predict exam performance is the possible existence of two types of test anxiety: (1) encoding and organization problems during studying along with retrieval problems during the exam and, (2) recall difficulties during the exam without problems in studying and organizing information.

The reliance upon student perceptions of the exam experience is a key limitation of the study. Generalizations that are based upon self-reports may or may not be valid and could be misleading. Students who do poorly on exams may have greater difficulties explaining and communicating why they did not do well as compared to high exam performers explaining their outstanding performance.

Even participating in the study might have been perceived as a threat and evoked a defensive response with some potential subjects. An analysis of the highest quartile and lowest quartile on Exam 1 performance yielded interesting findings. Only 40% of the students

who scored in the lowest exam quartile chose to participate in the study while 76% of students in the highest exam quartile chose to participate in the study. It deserves to be noted that students decided whether or not to participate in the study well prior to taking the first exam.

Nevertheless, the results of the current study suggest some important conclusions for those interested in helping students who claim to suffer from test anxiety. Student perception of the number of exam items skipped or changed seems unrelated to performance. These test-taking strategies appear to be more of a personal preference or dependent upon other related strategies. Generalizations are unwarranted related to advising that students employ such techniques, but if such strategies have proved successful, they can be continued without performance risks.

Since the student perception of items guessed is related to performance, students should be advised that when they sense this happening they are likely to be doing poorly. Unfortunately, it is just such a perception that is likely to increase anxiety levels even more during the exam. Although recognizing the confusion related to new vocabulary words was a less powerful predictor of performance, this

perception is also likely to be a signal to students that they are doing poorly on the exam.

The current focus upon state anxiety and the belief that a situational learning context is likely to offer unique testing circumstances should make student predictions most powerful in this situation. It is quite remarkable to discover that exam prediction at the initial exam became an even more powerful predictor (r=+.73) by the end of the course (see Table 2). The finding that the actual initial exam score in the course and student exam estimate as predictors of end of the semester class average explained 66% and 53% of variance, respectively, in the dependent variable was impressive. The increased predictive power of items guessed, anxiety, and exam estimate from the target exam to the final class average suggests stability of these variables over time and across exam experiences. Situational and personality factors seem to both be reflected in the nature of test anxiety.

Students need to be told that most students sense distractions during an exam, particularly sensory events, but it is how they interpret these events that leads to renewed focus of attention or loss of focus. Experiencing distractions alone is not cause for worry, but learning to

re-focus seems crucial to academic success on exams. Previous research documented anxiety reactions and distractions related to the critical classroom event when the first person finishes the exam (Herman, 1997).

In a similar vein, many students report retrieval problems during an exam, but most successful students seem to have developed cognitive strategies for dealing with such inevitable circumstances. Anxiety appears to interfere with both the recall of information and making logical judgements on the exam.

The fact that some students reported using sound test-taking strategies and not being distracted while doing poorly on the exam is suggestive of information processing difficulties during study preparation. Such findings are consistent with the two-fold variation of test anxiety theory where some suffer from only interference during the exam and others suffer from encoding and organizational study problems before the exam.

The vast amount of unexplained variance (58%) in estimating actual exam score from the exam estimate infers considerable uncertainty of students with regard to eventual exam outcome At least part of this discrepancy can be understood in terms of the desire for

good exam performers to low-ball their estimates in order to avoid disappointment and poor exam performers tendency to over estimate their exam performance as if to reflect hope or wish fulfillment.

The use of qualitative and quantitative measures to explore the test-taking experience seems to hold great potential. The search for common dispositions of students during exams can offer useful intervention strategies for students. Perhaps future research in this area can unlock key elements of exam taking that can assist students as they try to perform up to their potential during these evaluation ceremonies.

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Table 1

Descriptive Statistics for All Variables

Empirical Data

	Total Sample			
	Mean	sd	Minimum	Maximum
Exam Items Changed (N=52)	2.42	4.59	0.00	30.00
Exam Items Skipped (n=52)	3.48	4.75	0.00	25.00
Exam Items Guessed (N=51)	4.86	5.79	0.00	25.00
Test Anxiety Level (N=52)	1.45	0.79	0.00	3.00
Estimated Exam Score (N=51)	60.35	12.11	40.00	73.00
Actual Exam Score (N=51)	60.13	8.03	40.00	73.00
Exam Discrepancy (N=51)	00.00	7.24	-15.00	+19.00
Final Class % Average (N=52)	83.00	10.17	61.00	99.00

Dichotomous Variables

	Response	
	YES	NO
Changed Answers (N=52)	n=33 (64%)	n=19 (36%)
Skipped Items (N=52)	n=35 (67%)	n=17 (33%)
Honestly Guessed (N=52)	n=46 (89 %)	n=6 (11%)
Confusing Vocabulary Words (N=52)	n=8 (15%)	n=44 (85%)
Detected Subtle Changes (N=52)	n=50 (96%)	n=2 (4%)
Easily Distracted (N=52)	n=15 (29%)	n=37 (71%)
Drew a Blank (N=51)	n=31 (60%)	n=20 (39%)
Recall Problems (N=52)	n=24 (46%)	n=28 (54%)
Judgement Problems (N=51)	n=8 (16%)	n=43 (84%)

Table 2
Correlation Coefficients for Predictors of Academic Performance

	Dependent Variables	
	Correlation to	
	Actual Exam Performance	Final Class % Performance
Independent Variables		
Exam Items changed	- .05 ns	+.04 ns
Exam Items Skipped	+.04 ns	+.08 ns
Exam Items Guessed	-.50 **	-.56 **
Confusing Vocabulary Words	-.31 *	-.21 ns
Subtle Changes	+.19 ns	+.19 ns
Distractibility	-.25 *	-.22 ns
Drawing a Blank	-.40 **	-.36 **
Test Anxiety	-.25 *	-.33 **
Recall Interference	-.49 **	-.39 **
Judgement Interference	-.34 **	-.20 ns
Exam Estimate	+.65 **	+.73 **
Exam Discrepancy	+.54 **	+.22 ns

ns non significant
* p<.05
** p<.0l

Note: A one-tailed test was used since independent and dependent variables were declared prior to data collection.

Table 3
Qualitative Explanations of Distractibility

Were you easily distracted during the exam? Explain.
Codes: Y=Yes N=No (exam performance-%correct)

Sources of Distraction

Y(64%) Pages flipping, noise outside... I'm just easily distracted.
Y(69%) I sit in the front row and the people asking the professor questions interrupted my thoughts.
Y(93%) People coming in and going out of offices.
Y(53%) Another teacher giving a lecture.
Y(53%) Thinking about other things while trying to understand some of the longer questions.
Y(57%) For most of the exam, I was focused, but when people started to leave.. .then I began to panic.
Y(77%) Coughing person in front of me.
Y(92%) Concerns outside of class.
Y(87%) People who finished early.
Y(69%) When people began to leave the room, my attention on the test began to diminish.
Y(67%) A female student asking a question, people turning pages.
Y(81%) Little things. Everything and anything distracts me.
Y(84%) Hallway noise; actually a female teacher's voice.
Y(88%) Door opening; heard other classes.
Y(80%) Noise from coughing, etc.
Y(76%) Only at the end.. .people leaving.

Sources of Concentration
N(89%) The thought of completing the exam and doing well.
N(64%) Everyone was quiet.
N(91%) Tests are very important to me. I like to do well so I concentrate.
N(92%) Quiet room.
N(92%) Re-reading the question several times until I knew that I understood what it asked.
N(96%) Block everything else out.
N(57%) The quiet.
N(92%) I studied so I actually knew a lot of the answers.

Table 3 (Continued)
Qualitative Explanations of Distractibility

Sources of Concentration

N(91%) Reading very carefully.
N(95%) I just kept focusing on the question and I covered the choices up, and write down my thoughts and marked the ones I knew were wrong.
N(91%) Lip reading...to myself.
N(91%) I knew the material well enough to want to stick through it and finish.
N(92%) The room was very quiet.
N(97%) Nothing in particular.. .I have taken a lot of exams.
N(59%) The need to get the best grade I could.
N(65%) The seriousness of the test.
N(88%) Focusing on the exam.. .blocking everything else out.
N(87%) The idea of time ticking away.
N(85%) I just focused on taking my time and thoroughly read each question.
N(89%) I need to get a good grade on this test.
N(72%) Focusing on the task at hand.
N(89%) Focusing on the problem and trying to solve it quickly.
N(87%) Wanting to finish the test.
N(88%) I wanted to get done.
N(84%) The door being closed.
N(77%) Re-reading the question and generally ignoring everything else.
N(77%) The sentence patterns and examples were easy to understand.
N(89%) I knew I had to concentrate and go slow so I could get a good grade. I need a good grade.
N(80%) I just stayed focused...who cares what other people are doing.
N(73%) I was determined to concentrate.

Table 4
Qualitative Explanations of Drawing a Blank
Did you draw a "blank" during the exam? Please describe.
Codes: Y=Yes (exam performance-%correct)

Y(64%) I remember reading it, where is it at.. .but not what it is.
Y(89%) I tried to remember if philosophy was part of the humanities or a social science.
Y(69%) I tried to remember the terms intrinsic and extrinsic as they were written on the board in class.
Y(64%) Just couldn't focus to remember small differences between stages, etc.
Y(53%) There was so much it was confusing.
Y(57%) The answer was at the tip of my tongue, but I could not get it.
Y(53%) I went over some questions many times before the test, then I forgot some of the information when I got to the question.
Y(92%) Uncomfortable--told myself not to panic... it was only one question.
Y(92%) Frustration. I remember seeing it or learning it before, but don't know any connections to the word.
Y(91%) Just trying to remember some of the orders of stage development...then it came to me.
Y(92%) Behavioristic psychology and all that it entailed was very confusing. I couldn't remember all of it.
Y(91%) It makes me mad.
Y(59%) Very frustrating.
Y(65%) Erikson's theory.
Y(87%) Sometimes I would draw a blank trying to remember differences in stage theories.
Y(69%) All the people and their theories just became all messed up.
Y(89%) When I made connections with other exam items, I finally retrieved the information.
Y(67%) I felt like it was right there. I studied so hard, but just couldn't find the words for the answer.
Y(81%) I always draw a blank and have to sort through my brian to find the answer.
Y(84%) Annoying. You can see it mentally in your notes, but you can't recall it.
Y(88%) I knew all the stage theorists and when it came to the questions, I froze up.. .had no clue.

Table 4 (Continued)
Qualitative Explanations of Drawing a Blank

Y(80%) The answer is right there @ "the tip of your tongue" and I'll remember it when I turn in my test.
Y(84%) I just found it difficult to remember a concept.
Y(77%) It's as if I knew the answer, remembered reading it, but could not come up with it.
Y(80%) I just skip it and come back to it later, that usually works to remember.
Y(73%) I definitely knew the answer before I came into the exam, and then couldn't recall it.

Table 5
Qualitative Descriptions of Recall Interference

Did anxiety interfere with recall during the exam? Please describe.
Codes: Y=Yes N=No (exam performance-%correct)

Explanations of Recall Interference

Y(69%) I feel that MC questions are very difficult and time consuming, since I need to re-read the question with each separate answer and sometimes the words get jumbled!!
Y(64%) Just a little nervous, 1st test of the class
Y(53%) I got all flustered and began confusing the information.
Y(92%) I felt anxious as my study time was inhibited due to personal reasons. My mind wandered and even information I felt I knew, I couldn't recall.
Y(87%) Pressure causes me to make obvious mistakes on material I know.
Y(65%) I had stages mixed up and couldn't get them straightened out.
Y(53%) I was anxious to find questions I definitely knew rather than spend time on ones I had to think on more.
Y(88%) Just a little bit.. .second guessing my answers.
Y(85%) I feel it did a little because I would confuse some of the theories together and become more anxious. Then I would just make myself relax and things would clear up.
Y(69%) Before tests, I am always nervous; especially since I have two tests back-to-back today.
Y(67%) I always do this. Exams are a big deal, they are most of your grade. If I get a bad grade, I fail the class. If I fail the class, I fail out of school, etc. It has a chain reaction (As you can see I have a fear of failure.)
Y(84%) Well, you know you studied it and you know you know it, but the anxiety makes you second guess yourself and your knowledge.
Y(81%) Too many things running through my mind at once.
Y(77%) It complicates your concentration.
Y(76%) At first, but after the initial "Oh, my God", I got over it and remembered.
Y(80%) Because if you are nervous.
Y(73%) I always want to do really well. When I draw a blank on something I know the answer to, it makes me nervous.

Table 5 (Continued)
Qualitative Descriptions of Recall Interference

Explanations of Recall Interference
Y(83%) Drew a blank.
Y(64%) First exam, did not know what to expect.

Explanations for Lack of Recall Interference
N(93%) I felt that I was prepared for the exam. I also use calming techniques like self-talk.
N(92%) A little anxiety keeps me focused, kind of perks me up and peaks my performance.
N(75%) I don't believe this exam caused me to tense up because I was able to answer the questions to the best of my knowledge.
N(92%) I do not suffer from test anxiety at all.
N(87%) Usually, I am very nervous taking exams. Once I feel comfortable (usually after the first page), I relax and act more confident of my abilities.
N(92%) When I started reading the questions, I realized I knew more answers than I thought before.
N(89%) I just try not to get upset until after the exam.
N(89%) I studied quite a bit, so I was fairly confident of the material.
N(87%) Had none.
N(88%) I felt prepared-went over the practice test 4 times, studied the study guide a lot, but felt confused during the exam.
N(88%) I feel comfortable with the material.

Table 6
Qualitative Descriptions of Judgement Interference

Did anxiety interfere with judgements made during the exam?
Codes: Y=Yes N=No (exam performance=%correct)

How Anxiety Interferes with Judgement

Y(69%) When I am anxious my brain seems to get fried faster and near the end of the exam my answers were (it seems) not as correct as in the beginning.
Y(57%) Because I couldn't remember information.
Y(65%) Sort of. I was a bit nervous sorting out data that seemed to be clumped together.
Y(67%) I concentrate so much on the affects of my exam grade that I can't concentrate on the exam.
Y(77%) First time test for this class--will do better now.

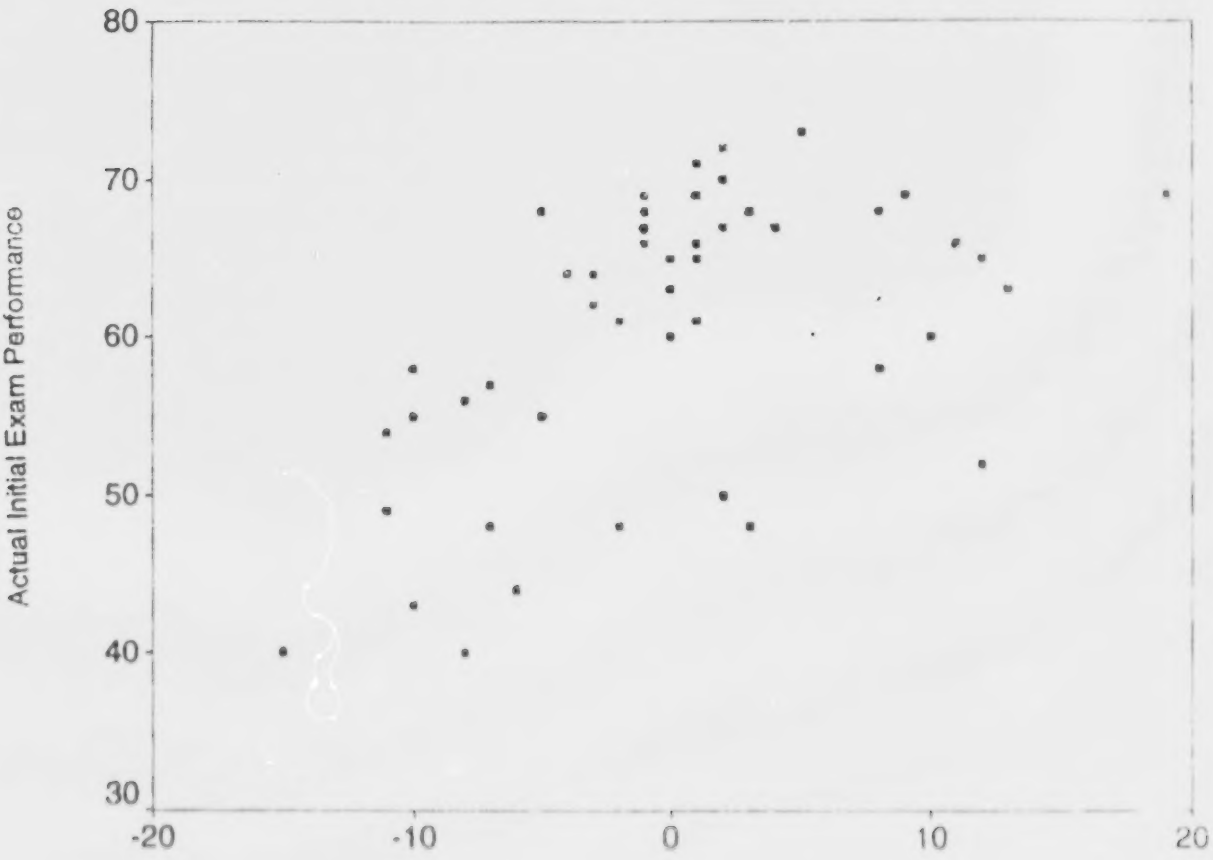
Why Anxiety Doesn't Interfere with Judgement
N(64%) Stay calm, focus, and think.
N(93%) I use self talk and process of elimination. I am also excited about the knowledge that I have learned. Tests let me know what I need to work on.
N(53%) It did somewhat, but I concentrated as much as possible and fought through it.
N(92%) I like exams--They give me a bearing on what I am really retaining.
N(92%) I tried the deductive tactics suggested to us on the handout.
N(92%) This time I decided not to "cram" right before the test. Instead, I read for pleasure and then quickly looked over a few things right before the exam.
N(92%) I believe that I either know the material or not, so there is no rational reason to be anxious.
N(75%) I think I seem to concentrate more when I'm under pressure.
N(87%) I dealt with anxiety because it lowered after the first part of the exam.
N(69%) I answered the questions to the best of my knowledge.
N(89%) I just take it one question at a time.
N(72%) I make sure that I'm well prepared for the exam.

Table 6 (Continued)
Qualitative Descriptions of Judgement Interference

Why Anxiety Doesn't Interfere with Judgement

N(89%) I usually don't feel pressure, if I prepare well for an exam ahead of time.
N(87%) I don't let it bother me.
N(84%) Well, you're nervous, but you still try to make the best choice "educated guess" you can and deal with the possible consequences.
N(88%) I felt prepared, but maybe once I actually saw the new questions, I worried.
N(77%) I prepared as much as possible. Besides, it's too late now.
N(88%) I go into exams with the attitude that either I know it or I don' t.
N(76%) I try to study well and prepare to do well.
N(80%) When I get nervous, I focus on something else, then return to the question.
N(73%) I study a week ahead of time.
N(83%) I did the best I could remembering.

Figure 1
Scatterplot of Estimated Discrepancy as a Predictor of Exam Score



Interpretive Notes:

High positive values indicate where estimates were lower than actual scores.

Large negative values indicate where estimates were higher than actual scores.

Appendix A

1. After you finished the exam, did you go back over the exam and change some answers? Yes ___ No ___
   If so, estimate how many items you completed in this manner.
   _____ items out of 75

2. Did you skip some exam items and go back to complete these items? Yes ___ No ___ If so, estimate how many items did you completed in this manner. _____ items out of 75

3. Were there vocabulary words on the exam that were not related to psychological content which confused you? Yes _____ No _____
   If so, please give examples of such words below.

4. Did you honestly guess on some items such that you had no idea whether or not you were marking the correct answer?
   Yes___ No ___
   If so, estimate how many items did you completed in this manner. _
   _____ items out of 75

5. Were you able to detect subtle changes in actual exam items as compared to items on the practice exams? Yes ____ No _____

6. Were you easily distracted during the exam? Yes _____No _____
   If so, what distracted you? (try to be specific here)

   If you were not distracted, what helped you maintain your concentration?

7. Did you draw a "blank" while trying to retrieve some information from memory during the exam? Yes _____ No _____
   If so, please describe this experience.

Appendix A

(Continued)

8. How anxious were you on the exam? (Place an x on the scale below)

Not Anxious at all	Slightly Anxious	Somewhat Anxious	Very Anxious

9. Do you believe that anxiety interfered with your ability to recall information needed to perform well on this exam?
   Yes ____ No _____
   If so, explain this experience. If not, why didn't anxiety play a role? here?

10. Do you believe that anxiety interfered with your ability to make good (logical) judgements on this exam? Yes ___ No___ If so, explain this experience. If not, how do you deal with exam pressure?

11. Please offer your best estimate of how many of the 75 items you honestly think that you marked correctly on this exam. _____

IMPORTANT NOTE: (Remember that this estimate and all other responses on this form will have no influence upon your actual exam score.)